

Measuring Service Quality for Older Adults in Continuing Care Retirement Communities

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In order to promote foodservice for older adults, foodservice directors in Continuing Care Retirement Communities (CCRCs) must identify the dimensions used by residents to evaluate the service quality of dining service. A multidimensional measure of perceived service quality was developed based on residents' responses about their experiences with dining service. A survey was administered to residents in two CCRCs. Based on the results of principal component analysis, this study identified four dimensions: food quality, dining room employee's attitude and service skills, dining room employee's safety and cleanliness, and systemization of service delivery process. A new dimension that reflects residents' concern for the dining room employees' safety and cleanliness also emerged. This study points to areas of improvement for food quality and dining room employee's safety and cleanliness.

Key words : Foodservice, Service quality, Food quality, Older adults

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INTRODUCTION

Foodservice is a combination of tangible components, such as food and dining environments, and intangible components, such as employee interaction.¹⁾ Appropriate combinations of the tangible and intangible aspects of service generate customer satisfaction. Service management is a critical issue across the various sectors of foodservice industry and is not an issue limited to the commercial sector. The American Dietetic Association emphasized the important role of food and nutrition services in achieving customer satisfaction, quality outcomes, cost containments, and revenue generation.²⁾

The delivery of higher levels of service quality is important for service providers to position themselves more effectively in the competitive market.³⁾ Service quality plays an important role in lowering customer defection and increasing retention.⁴⁾ Understanding of the nature of service quality and how it is achieved in organizations has become an important issue.⁵⁾ Despite the recognized benefits and the demand for higher service quality, measuring service quality is difficult because the service quality is an elusive and indistinct construct.^{5),6)}

Several studies have been reported regarding internal

and external customers' evaluation of food and service quality in institutional settings. Gilmore and Russell investigated foodservice employees' perceptions on the importance of specific meal service factors in providing quality meal service to residents in nursing facilities. They identified eight categories of factors related to meal service: creating a pleasant dining room atmosphere, managing personnel, using aesthetics, using meal patterns, understanding residents' rights, serving nourishments, using work simplification, and serving food. Managing personnel was perceived as essential, while creating a pleasant dining room atmosphere was rated lowest.

DeLuco and Cremer evaluated customers' perceptions and importance of quality of hospital food and dietary services.⁷⁾ Quality of the food and service was considered very important to their hospitalization by half of the respondents. Placing food within the patients' reach was the service characteristic considered most important. Pleasant greeting was the second most important service characteristics followed by dependable tray delivery.

Gregoire investigated meal service quality and employees' service orientation in hospitals with different delivery services.⁸⁾ Patients assessed characteristics of the personnel delivering the tray more positively than to the quality of the food. The quality of food was rated significantly higher by patients in hospitals where dietary employees delivered meal trays than by patients in

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hospitals where nursing employees delivered trays. Patients' assessment of meal service was categorized into two factors: meal tray delivery and food quality.

1. Conceptualization and Dimensions of Service Quality

Conceptualization of service quality was one of the major topics discussed in the early service marketing literatures.^{5,9)} Gronroos (p. 38) defined service quality as a perceived judgment, resulting from an evaluation process where customers compare their expectations with the service they perceive to have received.¹⁰⁾ Gronroos contended that service quality could be understood as a form of attitude and that customers evaluated service quality by comparing the service they expected with the service they actually received. He distinguished service quality as technical quality (what is done) and functional quality (how it is done).¹⁰⁾ The technical quality involves what the customers actually receive from the service providers (outcomes). The functional quality is related to the way the service is delivered to the consumers (processes).

Sureshchandar, Rajendran, and Kamalanabhan identified five factors of service quality as critical from the customers' point of view.¹¹⁾ These factors are: (1) core service or service product; (2) human element of service delivery; (3) systematization of service delivery: non-human element; (4) tangibles of service; (5) social responsibility.

Parasuraman *et al.* defined the perceived quality as "the consumer's judgment about an entity's overall excellence or superiority" (p.15) and developed SERVQUAL.⁵⁾ SERVQUAL is based on their notion that service quality is the comparison of what customers feel the service firms should offer (i.e. from their expectations) and their perceptions of the performance of firms providing the services. In SERVQUAL, service quality is assessed by subtracting subjects' ratings of expectation of service from their ratings of the performance of service received.⁵⁾ They identified ten dimensions of service quality in an exploratory study: tangibles, reliability, responsiveness, communication, credibility, security, competence, courtesy, understanding the customer, and access. These ten dimensions were further purified to five: tangibles, reliability, responsibility, assurance, and empathy.³⁾

Although many studies used the SERVQUAL instrument, researchers disagreed about the number and types of dimensions. Parasuraman, Zeithaml, and Berry recognized that service quality was a multidimensional construct and there was no agreement regarding the number

of dimensions or their interrelationships.¹²⁾ Bolton and Drew noted that different service dimensions were relevant in different industries. Thus, it is necessary to develop multiple scale items that adequately capture a particular study context.¹³⁾ Oh and Parks described three plausible sources of this discrepancy in the dimensionality of SERVQUAL: 1) the SERVQUAL is situation specific dependent on the expectation or performance scores, 2) the structural differences of service quality across service, and 3) the difference in the level of factor abstraction achieved by researchers.¹⁴⁾

2. Measurement of Service Quality

A valid and reliable measurement of service quality is vital for managers since service quality is a strategy used to position a business competitively.^{3,6)} Parasuraman *et al.* developed SERVQUAL which is the most popular instrument for measuring service quality.³⁾ SERVQUAL has been adopted in a variety of industries.¹⁵⁾ Many research studies of service quality incorporated the SERVQUAL model.¹⁶⁻²¹⁾ Table 2 illustrates the major findings of studies which have measured service quality using SERVQUAL.

The gap approach of SERVQUAL has been criticized for problems because of the difference scores (in terms of reliability, discriminant validity, and variance restrictions) and measuring expectations.^{15,22)} The dimensionality, operationalization, measurement, and applications of SERVQUAL have been criticized. Cronin and Taylor suggested that service quality should be measured as an attitude rather than the use of the disconfirmation framework.⁶⁾ They proposed SERVPERF as an alternative method of measuring perceived service quality. The performance-based model (SERVPERF) was found to have a better predictive power in measuring the service quality.^{6,23)} In addition, the performance-based model can avoid problems from measuring expectations.

The needs to adapt and modify the SERVQUAL instrument to a specific industry have been recommended since the instrument was developed as a generic service quality measure.²⁴⁾ Knutson, Stevens, and Patton modified the SERVQUAL measure and developed DINESERV, a five-factor instrument which the same was to SERVQUAL for use in the restaurant sector.²⁵⁾ The DINESERV scale is composed of 29 statements that ask customers' normative expectations of service. Reliability was found to be the most important dimension, followed by tangibles, assurance, responsiveness, and empathy.

Lee, Shanklin, and Johnson developed a service quality measurement for foodservice in Continuing Care

Retirement Communities (CCRCs).²⁶ The instrument was developed to encompass both the process and outcome aspects of service quality. Some items were adopted from the SERVQUAL and DINESERV scales. Although the scale showed good content validity, the study failed to verify the theoretical dimensionality of service quality of the foodservice industry for the older adults.

The review of literatures reveals the dynamics of foodservice management for the older adults and conceptualization and measurements of service quality. Results of several research studies have been reported regarding assessing and managing foodservice. However, few studies have been reported on the issues and strategies related to foodservice management for the older adults or the residents of CCRCs.

It is extremely important for CCRCs to understand how residents evaluate a foodservice. In order to promote foodservice for older adults, a service provider (foodservice director) must first identify the dimensions used by residents to evaluate the service quality of the dining service in CCRCs. The focus of this study is to better understand service quality dimensions. Thus, the purpose of the study is to identify the dimensions of service quality in foodservice for older adults.

SUBJECTS AND METHODS

1. Sample

The population was the residents of independent living

Table 1. Major Findings in the Previous Service Quality Research.

Researchers	Year	Subjects and Location	Major Findings
Bojanic & Rosen	1994	Chain restaurant	The researchers identified dimensions similar to those in SERVQUAL. The empathy dimension was segmented into two dimensions: "knowing the customer" and "access". Knowing customers reliability and assurance were the most significant in predicting overall restaurant quality.
Richard <i>et al</i>	1994	Pizza delivery restaurant	The researchers added one outcome dimension that included items that measured the taste topping and crust of pizza. The outcome dimensions and three process dimensions (responsiveness reliability and empathy) were revealed. Both process and outcome quality were important determinants of choice.
Lee & Hing	1995	French and Chinese restaurant	Results revealed that the customers had high expectations for the service quality, dimensions of assurance (eg, orders without errors well-trained staff) and reliability (eg, accurate check staff are dependable in fixing problems). Customers' least important expectations were associated with variables related to the tangible dimension (eg, visually attractive dining areas modern dining equipment and employees who are well-dressed).
Johns & Tyas	1996	Contract catering service	The researches included the several additional items related to the quality of food and value for money. Employee behavior efficiency appearance and interaction were variables that differentiated the contract foodservice operation and restaurants. Food quality was not a significant differentiating factor.
Heung <i>et al</i>	2000	Full-service casual dining quick service and Chinese restaurants in a Hong Kong airport	Travelers had different levels of expectations for the different types of restaurants. For instance travelers had the highest expectations in "receiving food as they ordered it" in the full-service casual dining and Chinese restaurants. They had the highest expectation in "prompt and quick service and convenient operating hours" for quick-service restaurant.
Fu & Parks	2001	Older customers of family-style restaurants	The researchers investigated the relationship between service quality and customer loyalty. They identified three different dimensions from the SERVQUAL dimensions: tangibles reliability-responsiveness and assurance-empathy. Intentions to return and to recommend were significantly influenced by reliability-responsiveness and assurance-empathy dimensions. Friendly service and individual attention were more important than tangible aspects of service in influencing older customers' behavioral intentions.

units of CCRCs located in a Mid-western State in America. The Consumers' Directory of Continuing Care Retirement Communities: 1999-2000 published by American Association of Homes and Services for the Aging (AAHSA) was used for the sampling frame.²⁷⁾ The facilities with less than 50 residents in their independent living units were excluded because foodservice is often limited in these facilities. Two CCRCs were selected using random digit table. The instrument was administered to all residents of independent living units of the two selected CCRCs.

2. Instrument Development

The instrument consisted of 18 service quality measurement items. Items were adapted from Fu and Parks; Lee, Shanklin, and Johnson; and Seo and Shanklin.^{17),26),28)} Fu and Parks refined the SERVQUAL instrument for elderly diners in restaurant setting.¹⁷⁾ Lee, Shanklin, and Johnson developed a service quality measurement for CCRC residents based on the SERVQUAL and DINESERV.²⁶⁾ This study included items about personal hygiene and food sanitation/food handling skills based on the focus group results in CCRCs by Seo and Shanklin.²⁸⁾ Personal hygiene and food sanitation/food handling skills are important aspects of service quality which is not captured by the original SERVQUAL scale. This study focused on the measurement of perceived service quality rather than gap analysis. Residents were asked to rate their perception of dining service in CCRCs. Service quality measurements used a 5-point Likert scale, ranging from "1-strongly disagree" to "5-strongly agree."

3. Pilot Test

As a pilot test, the questionnaire was distributed to residents of one CCRC in Mid-western State in America. A total of 107 questionnaires were distributed and 74 questionnaires were completed. A response rate of 69% was obtained from the independent living residents. Based on the results of the pilot test, three measurement items were deleted for the reliability of items and clarity of statements.

4. Survey Administration

The administrators and foodservice directors whose facilities were selected for the study were contacted and asked to participate. Prior to conducting survey, the researcher visited two CCRCs to discuss the administration procedure. Both independent living unit directors and foodservice directors of two CCRCs and the researcher agreed to use the newspaper which is delivered regularly

to the CCRC residents. The questionnaire with a cover letter and a return envelope were inserted in the CCRCs newspaper. The residents were asked to place their completed survey in a drop box in their residential areas. The researcher explained the purpose of the study during meal service in each dining room and encouraged the residents to participate. The CCRCs promoted the completion of the questionnaires through articles in their newsletter and information on their community-closed circuit TV.

5. Data Analysis

Statistical analyses were performed using SPSS for Windows (Version 11.5, 2002, SPSS Inc., Chicago, IL). Data collected from the two CCRCs were aggregated for statistical analysis. Descriptive analysis was performed to identify the demographic profile of the residents and ratings of food and service quality attributes. Exploratory factor analysis (principal component analysis) was conducted to examine the dimensionality of service quality.

RESULTS AND DISCUSSION

1. Profile of Respondents

A total of 410 surveys were returned of 2150 surveys distributed in two CCRCs. Eighty-three responses were deleted due to incomplete responses. The response rate of the final sample was 14% (327/2150). The participants of this study were predominantly females (206 females and 92 males). The majority (66%) of respondents had completed some college or earned a college degree. One-third of the respondents had some college degree (33%) and 20% of the respondents had graduate degree. The average age was 82 years old. The majority of participants ate their evening meal in the dining room. Table 2 presents the profile of respondents.

2. Exploratory Factor Analysis

An exploratory factor analysis (principal component analysis) was conducted on the 18 items of performance scales. Varimax rotation was used for the better interpretation of the components. As shown in Table 4, four factors and factor loadings of each factor were identified. Five items were loaded on the first factor, food quality. The second factor, dining room employees' attitude and service skills, included 6 items. The third factor, dining room employees' safety and cleanliness, contained 3 items. The items loaded on the fourth factor, systemization of service delivery, were non-human

Table 2. Profile of the Respondents.

	Number (%)		
	Total (N=327)	CCRC A (N=117)	CCRC B (N=210)
Gender			
Females	226 (29.4)	82 (70.1)	144 (68.6)
Males	96 (69.1)	35 (29.9)	61 (29.0)
No response	5 (1.5)	0 (0)	5 (2.4)
Marital Status			
Single	22 (6.7)	12 (10.3)	10 (4.8)
Married	125 (38.2)	33 (28.2)	92 (43.8)
Widowed	162 (49.5)	65 (55.6)	97 (46.2)
Divorced	10 (3.1)	5 (4.3)	5 (2.4)
No response	8 (2.4)	2 (1.7)	6 (2.9)
Education			
Less than high school degree	6 (1.8)	3 (2.6)	3 (1.4)
High school degree	72 (22)	31 (26.5)	41 (19.5)
Some college	108 (33)	39 (33.3)	69 (32.9)
Undergraduate degree	49 (15)	15 (12.8)	34 (16.2)
Some graduate work	19 (5.8)	9 (7.7)	10 (4.8)
Graduate Degree	65 (19.9)	18 (15.4)	47 (22.4)
No response	8 (2.4)	2 (1.7)	6 (2.9)
Frequency of dining in CCRC (per month)			
Breakfast	1.16±4.52	3.14±6.8	0.15±2.09
Lunch	3.51±7.96	10.2±10.94	0.09±0.57
Supper	19.74±11.58	7.39±8.9	26.5±0.88
Age	82.14±5.86	81.8±6.3	82.34±5.6
Lengthy of residency (year)	5.49±4.96	6.25±5.94	5.09±4.33

elements of service. The four factors accounted for approximately 69.05 percent of the variance. The variances of four factors were 20.68, 19.00, 16.52, and 12.85, respectively.

Cronbach Alpha coefficient was calculated for the four dimensions of the service quality. An alpha value of 0.70 or above was considered to be highly reliable. The reliability coefficients for the four dimensions were ranged from 0.72 to 0.91 (Table 4). The high alpha value meant good internal consistency among the items within each dimension.

Table 3 and 4 shows a summary of the respondent ratings for the eighteen service quality measurement items and four dimensions of service quality. The highest scored dimension of service quality was dining room employees' attitude and service skills, with a mean score of 4.26. This implies that the dining room employees of CCRCs in this study were always willing to help residents and friendly. Also, they provided prompt and reliable service and exhibited respectful attitude and knowledge of service. The highest scored individual item (with a mean of 4.58) was related to the friendliness of the dining room employees (Table 3).

Table 3. Service Quality Ratings of Foodservice in CCRCs.

Measurement Items	Mean	SD
Service Quality (SQ)^a		
The dining room employees are friendly.	4.58	0.66
The dining room employees exhibit a respectful attitude.	4.51	0.66
The dining room employees are always willing to help me.	4.46	0.70
Dining room is clean and comfortable.	4.46	0.76
The dining room employees are clean and appropriately dressed.	4.24	0.78
The dining room employees have good personal hygiene.	4.21	0.84
Menu is easy to read.	4.17	0.91
Dining room is easy to move around within.	4.16	0.96
The dining room employees offer reliable service.	4.13	0.84
The dining room employees follow safe food handling practice.	4.04	0.85
Dining service hours are convenient.	3.99	0.98
The dining room employees provide me prompt service.	3.93	0.89
The dining room employees have knowledge of service.	3.92	0.90
A variety of foods are offered.	3.85	1.05
Foods are served attractively.	3.80	1.00
The foodservice department serves good quality of food.	3.74	1.00
Foods are tasty and flavorful.	3.56	1.08
Foods are served at the appropriate temperature.(hot food hot cold food cold)	3.33	1.11

Food quality dimension had the lowest score, with a mean of 3.66. Good quality of food, food temperature, variety of food, taste and flavor of food, and presentation were included in the food quality dimension. The lowest scored food quality item was related to food temperature (with a mean of 3.33) (Table 3). This suggests that food-service managers should concentrate on their effort to improve food quality, service product of the foodservice. Even though the dining room employees of restaurants are very friendly, if the restaurant fails to offer a good quality of food, customers may not perceive the quality of service in the dining room as good.

Managing the service interaction between dining room employees and residents implies that attitude and service skills of dining room employees have effects on the residents' perception of service quality. The attitude and service skills of dining room employee help the residents to differentiate a satisfied service from a dissatisfied

Table 4. Principal Component Analysis - Service Quality Evaluations of Dining Service in CCRCs.

Factor Labels	Mean	SD	Principal Components			
			Factor 1	Factor 2	Factor 3	Factor 4
Food quality ($\alpha = .909$)	3.66					
The foodservice department serves good quality of food.	3.74	1.00	.84			
Foods are served at the appropriate temperature. (hot food hot cold food cold)	3.33	1.11	.78			
A variety of foods are offered.	3.85	1.05	.73			
Foods are tasty and flavorful.	3.56	1.08	.88			
Foods are served attractively.	3.80	1.00	.70			
Dining room employee's attitude and service skills ($\alpha = .897$)	4.26					
The dining room employees are always willing to help me.	4.46	.70		.63		
The dining room employees provide me prompt service.	3.93	.89		.79		
The dining room employees are friendly.	4.58	.66		.61		
The dining room employees exhibit a respectful attitude.	4.51	.66		.64		
The dining room employees offer reliable service.	4.13	.84		.82		
The dining room employees have knowledge of service.	3.92	.90		.63		
Dining room employee's safety and cleanliness ($\alpha = .898$)	4.16					
The dining room employees have good personal hygiene.	4.21	.84			.82	
The dining room employees follow safe food handling practice.	4.04	.85			.74	
The dining room employees are clean and appropriately dressed.	4.24	.78			.80	
Systemization of service delivery ($\alpha = .719$)	4.20					
Dining service hours are convenient.	3.99	.98				.65
Dining room is clean and comfortable.	4.46	.76				.47
Dining room is easy to move around within.	4.16	.96				.46
Menu is easy to read.	4.17	.91				.54

Note: 1=strongly disagree and 5=strongly agree

service. Thus, the CCRCs need to train, motivate, and reward dining room employees to demonstrate the reliable service and friendly and respectful attitude.

Emphasis on the importance of training of employees was consistent with the managerial implications from previous researches. Bitner, Booms, and Mohr explored the types of customer-employee interaction which influenced the satisfaction with the service encounter.²⁹⁾ This result suggests that management can enhance employees' service delivery process by setting high performance standards, enabling contact employees to meet these standards, and appraising and rewarding them accordingly.

3. Summary and Conclusion

In order to promote foodservice for older adults, foodservice directors must identify the dimensions used by residents to evaluate the service quality of dining service in Continuing Care Retirement Communities (CCRCs). Food service directors should be aware that the concept of service quality is multidimensional. Most

of the SERVQUAL scale items focused on the human aspects of service delivery and tangibles of service. However, SERVQUAL instruments did not address other important components of service quality such as the service product. This study made an effort to develop an empirical model of service quality to understand the determinants of perceived service quality. Service quality evaluations in this study involved both the outcome and process of service delivery, in other words, food quality attributes and service quality attributes. Based on the results of principal component analysis, this study identified four dimensions: food quality, dining room employee's attitude and skills, dining room employee's safety and cleanliness, and systemization of service delivery process.

The results of service quality dimensions have managerial implications for foodservice directors in CCRCs. They can use their limited resources to improve the specific service dimensions. They also can bring about repeat residents and increase profitability by establishing internal and external standards of service quality and

performances. If foodservice directors administer service quality surveys at different times, it will be a valuable tool for the continuous quality improvement. The findings of this study were collected from two CCRCs in Mid-western State in America and the response rate was low. Thus, the sample of this study limits the generalizability of the findings to other parts of the foodservice industry. However, considering all 2150 residents did not have mandatory meal option, the response rate was acceptable.

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